

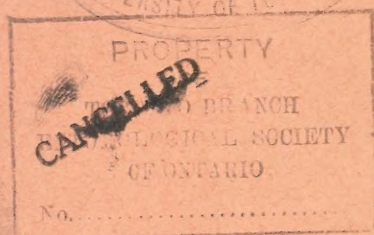
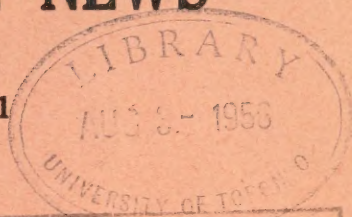
STORAGE
JANUARY, 1920

961
E574
U.31.
no. 1
Biological
& Medical
Serials

ENTOMOLOGICAL NEWS

Vol XXXI.

No. 1



ASA FITCH
1809-1879

PHILIP P. CALVERT, Ph. D., Editor.

E. T. CRESSON, Jr., Associate Editor.

HENRY SKINNER, M. D., Sc. D., Editor Emeritus.

ADVISORY COMMITTEE:

EZRA T. CRESSON,
PHILIP LAURENT,

J. A. G. REHN,
H. W. WENZEL.

LANCASTER, PA., AND PHILADELPHIA, PA.

Entered at the Lancaster, Pa., Post-Office as Second Class Matter
Acceptance for mailing at the special rate of postage provided in Section 1103,
Act of October 3, 1917, authorized on July 19, 1918.


ENTOMOLOGICAL NEWS


published monthly, excepting August and September, in charge of the Entomological Section of The Academy of Natural Sciences, Philadelphia, and The American Entomological Society.


ANNUAL SUBSCRIPTION, \$2.00 IN ADVANCE
FOREIGN SUBSCRIPTIONS, \$2.20 IN ADVANCE
SINGLE COPIES 30 CENTS


ADVERTISING RATES: Full width of page. Payments in advance.

One issue, one inch,	\$ 1.20,	two inches,	\$ 2.40,	half page,	\$ 4.00,	full page,	\$ 8.00
Five issues,	" 5.50,	" 11.00,	" 17.50,	" 35.00			
Ten issues,	" 11.00,	" 20.00,	" 35.00,	" 70.00			

 **SUBSCRIPTIONS AND ADVERTISEMENTS.** All remittances, and communications regarding subscriptions, non-receipt of the NEWS or of reprints, and requests for sample copies, should be addressed to **Entomological News, 1900 Race Street, Philadelphia, Pa.**


 All complaints regarding non-receipt of issues of the NEWS should be presented within three months from date of mailing of the issue. After that time the numbers will be furnished only at the regular rate for single copies. Not more than two issues will be replaced gratis through loss, in transit or in change of address, unless such have been registered, at the subscriber's expense.

 **MANUSCRIPTS.** Address all other communications to the editor, Dr. P. P. Calvert, Zoological Laboratory, University of Pennsylvania, Philadelphia, Pa., from September 15th to June 15th, or at the Academy of Natural Sciences, from June 15th to September 15th.

 **TO CONTRIBUTORS.** All contributions will be considered and passed upon at our earliest convenience and, as far as may be, will be published according to date of reception. The receipt of all papers will be acknowledged. Proof will be sent to authors only when specially requested. Twenty-five "extras" of an author's contribution, without change in form and without covers, will be given free when they are wanted; if more than twenty-five copies are desired *this should be stated on the M.S.*

SPECIAL NOTICE TO AUTHORS

Owing to increased cost of labor and materials, **no illustrations will be published in the NEWS during 1920**, except where authors furnish the necessary blocks, or pay in advance the cost of making blocks and pay for the cost of printing plates. Information as to the cost will be furnished in each case on application to the Editor. Blocks furnished or paid for by authors will, of course, be returned to authors, after publication, if desired.

 The printer of the NEWS will furnish reprints of articles over and above the twenty-five given free at the following rates: Each printed page or fraction thereof, twenty-five copies, 15 cents; each half tone plate, twenty-five copies, 20 cents; each plate of line cuts, twenty-five copies, 15 cents; greater numbers of copies will be at the corresponding multiples of these rates.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXXI.

JANUARY, 1920.

NO. I.

CONTENTS

Weiss—Notes on <i>Thymalus fulgidus</i> Er., and Its Fungus Hosts in New Jersey (Col.).....	1	Editorial—Some New Year's Resolutions for the Entomologist.....	22
Alexander—An Undescribed Species of Ptychoptera from the Western United States (Ptychopteridae, Dip.).....	3	Changes of Address.....	23
Knoll—Notes on Buprestidae with Descriptions of New Species (Coleop.).....	4	A Biography of Miss A. M. Fielde.....	23
Crawford—New or Interesting Psyllidae of the Pacific Coast (Homop.).....	12	Sentiment For and Against the Metric System.....	23
Weld—A New Parasitic Cynipid Reared from a Clover Aphid (Hym.).....	14	Increase Asked to Fight Mosquitoes (Dip., Culicidae).....	23
Viereck—Labenidae, a New Family in the Ichneumonidea (Hymen.).....	16	Entomological Literature.....	24
Baker—To Proposers of New Genera.....	19	Review—Ris's Libellulinen Monographisch bearbeitet.....	26
Baerg—An Unusual Case of Parasitism on Clastoptera obtusa Say (Hemip., Cercopidae; Dip., Drosophilidae).....	20	Obituary:	
		George Bringham Cresson.....	29
		Hereward Clune Dollman.....	30
		Harold Swale.....	30
		Frederic Hova Wolley Dod.....	30

Notes on *Thymalus fulgidus* Er., and Its Fungus Hosts in New Jersey (Col.).

By HARRY B. WEISS, New Brunswick, New Jersey.

This species, described by Erichson in 1844 (Germar. Zeits., bd. 5, p. 458), has long been known to breed in *Polyporus betulinus* (Bull.) Fr., a fungus which occurs only on species of birch and which attacks weakened trees with great rapidity. G. Dimmock (Direct. Collect. Coleop. 1872, pp. 19, 20) writes: "The larvae feed upon a fungus (*Polyporus betulina*) which is parasitic upon the trunks of white birch trees." According to Packard (Fifth Rept. U. S. Ent. Com., 1890, p. 510) the beetle is common in New England and a large number of larvae taken in Belmont, Massachusetts, produced beetles after a short period of pupation, on or about June 27, 1878. Smith (Ins. N. J. in State Mus. Rept., 1909) states that it occurs throughout the state of New Jersey

in May and June, being usually found on a white birch fungus and that Mr. Daecke bred it from such a fungus.

During the winter of 1918-19, the larvae of this beetle were very abundant in *Polyporus betulinus* at Morristown, Oradell and Monmouth Junction and in *Daedalea confragosa* (Bol.) Fr., at Monmouth Junction and High Bridge, all localities in New Jersey. Both of these fungi are members of the family *Polyporaceae* and are common in New Jersey, the former occurring on birch and the latter on dead wood or on living trees, especially of willow. *Polyporus betulinus* on account of its white color is more conspicuous and not as likely to be overlooked as *D. confragosa*.

Both the larvae and adults feed on the context and tubes and when numerous the fungus is completely riddled. Pupation takes place in the context in a little chamber excavated by the larva and requires about ten days, usually occurring during the last of April or in May. On account of its hairiness, the larva is usually covered with particles of fungus as is also the beetle as it works in the context. Beutenmueller (*Entomologica Americana* VI, 1890, p. 57) states that eggs are deposited during the fall and that adults emerge the following spring, the larvae becoming full grown in May. Beutenmueller also describes the larva and pupa and his descriptions may be supplemented by the following additions:

Larva. Cervical shield and anal process sometimes brownish. Head sparsely hairy. The fork-like process on the posterior extremity consists of a pair of prominent tubercles borne on a suboval, dorsal, chitinous plate on the ninth abdominal segment; each tubercle consists of a thick, central spine bearing five smaller ones; a long hair arises from the bases of the smaller ones. The chitinous plate is edged with minute tubercles each bearing a long hair and minute, similar tubercles occur on its surface.

Thoracic legs sparsely hairy and armed with a sharp claw at tip. Abdominal segments somewhat produced laterally into tubercles. Each thoracic and abdominal segment bears a thin, transverse, dorsal row of comparatively long hairs, with the lateral hairs longest; these rows of hairs are continued on the ventral abdominal surface. All hairs arise from somewhat tuberculate bases. Abdominal stigmata are located just above lateral tubercles. Length 6 to 9 mm. Width 2 to about 3 mm.

Pupa with body tapering to a blunt point at the posterior extremity, which is provided with two short tubercles terminating in sharp spines. The head bears several stiff hairs; anterior and lateral margins of thorax bear row of stiff hairs; dorsal surface of thoracic and abdominal segments bears transverse row of stiff hairs; all hairs arising from tuberculate bases.

An Undescribed Species of *Ptychoptera* from the Western United States (*Ptychopteridae*, *Diptera*).

By CHARLES P. ALEXANDER, Urbana, Illinois.

The undescribed species of the genus *Ptychoptera* Meigen that is described herewith has been confused in collections with the much larger and darker *P. lenis* O. S.

Ptychoptera minor n. sp.

♂ Length, 9 mm.; wing, 8.6 mm. Rostrum and mouth-parts yellow; palpi yellow, the last segment dark brown. Antennae with the basal segment yellow, the second segment brown, the flagellum dark brown. Head black, shiny.

Pronotum yellow. Mesonotum black. Pleura black, gray pruinose, the dorso-pleural membranes bright yellow. Halteres yellow. Legs with the coxae yellow, marked on the outer face with purplish brown, the fore coxae with a basal band and an apical spot, the middle coxae with a basal and an apical band, the hind coxae with the outer face largely brown, only the apical margin yellowish; trochanters light yellow; femora yellow, the tips scarcely darkened; tibiae and metatarsi yellow, the tips darker; tarsi brown. Wings with a strong yellowish gray suffusion, the costal and subcostal cells and along vein *Cu* more yellowish; narrow, indistinct brown seams along the cord and at the fork of *R*₄+*5*. Venation: *Sc* long, ending about opposite three-fourths the length of *R*₄+*5*; *Rs* moderately long, in alignment with *R*₄+*5*, sometimes spurred at origin.

Abdominal tergites black, segments three to nine with the lateral margins broadly reddish, this color increasing in amount on the terminal segments, the hypopygium entirely reddish; sternites black, broadly ringed caudally with yellowish. Male hypopygium with the ninth tergite massive, deeply notched medially as in *P. lenis* but the lateral lobes only moderately slender, their apices widely separated, quite far before the tip on the ventral face with a small, blunt reddish lobe. Penis-guard not narrowed at the tip, the apex broadly rounded.

In *P. lenis* the hypopygium is black, the lobes of the ninth tergite slender, very narrowly separated at their apices, close before the tip

with an appressed blackened spine; penis-guard conspicuously narrowed at the apex.

Habitat: Western United States.

Holotype, ♂, Monterey County, California, July 22, 1896.
Paratype, ♂, Juliaetta, Idaho, May 3, 1904. Type in the collection of the author.

This new species seems to be about as common as the only other western species of the genus, *Ptychoptera lenis* O. S. The two species are closely related but may be separated by the following key:

Size larger (male, wing over 11 mm.); abdominal tergites black, including the hypopygium; lobes of the ninth tergite of the male hypopygium with a subapical black appressed spine on the ventral surface.

P. lenis O. S.

Size small (male, wing under 9 mm.); abdomen with the sides of the tergites and the hypopygium reddish; lobes of the ninth tergite of the male hypopygium with a blunt reddish ventral lobe some distance before the tip.

P. minor n. sp.

Notes on Buprestidae with Descriptions of New Species (Coleop.).

By JOSEF N. KNULL, Bureau of Plant Industry, Harrisburg, Pennsylvania.

The following is a list of host-plants and emergence records of *Buprestidae* collected by the author and reared at Hummelstown, or Harrisburg, Pennsylvania. In all cases, the material was caged under out-of-door conditions.

Chalcophorella campestris Say. At Harrisburg, Pa., ninety living adults were chopped from their pupal cells in a dead beech (*Fagus americana*) about 14 inches in diameter on March 13, by Mr. H. B. Kirk and the author. The adults, which appear in the spring, transform in the fall and pass the winter in the pupal cells. The species was also reared from dead willow (*Salix nigra*) and buttonwood (*Platanus occidentalis*).

Buprestis rufipes Fab. Pupae of this beetle were observed in the heart-wood of a dead American elm (*Ulmus americana*) at Hummelstown, Pa., June 28, and on July 10 the adults were mature. Adults were also reared July 5 from the wood of a dead sour gum (*Nyssa sylvatica*) collected at Hummelstown, Pa. Beetles were also reared from dead beech (*Fagus americana*) and hickory.

Buprestis lineata Fab. Adults were reared from dead Virginia pine (*Pinus virginiana*) collected at Rockville, Pa.

Buprestis consularis Gory. Remains of adults were found in the wood of a dead pitch pine (*Pinus rigida*) at Charter Oak, Pa.

Buprestis fasciata Fab. Adults were found in abundance on freshly cut pine log at Endeavor, Pa., July 30.

Buprestis striata Fab. Breeds in dead soft and pitch pines. Adults which appear in the spring transform in the fall and pass the winter in the pupal cells.

Dicerca prolongata Lec. Was found breeding in the wood of a dead large-toothed aspen (*Populus grandidentata*) at Charter Oak, Pa.

Dicerca divaricata Say. This species does not seem to prefer any particular host-plant, and can be found breeding in a great variety of forest trees. Adults were reared from the dead wood of the following trees, collected at Hummelstown, Pa.: black birch (*Betula lenta*), ironwood (*Ostrya virginiana*), linden (*Tilia americana*), white ash (*Fraxinus americana*), sugar maple (*Acer saccharum*), redbud (*Cercis canadensis*), black ash (*Fraxinus nigra*) and American elm (*Ulmus americana*).

Dicerca pugionata Germ. On July 19, adults of this species were reared from witch-hazel (*Hamamelis virginiana*) collected at Manada Gap, Pa. Many of the witch-hazels in this section have been killed by this insect.

Dicerca obscura Fab. This species breeds in the dead wood of persimmon (*Diospyros virginiana*), although adults were reared from the dead wood of staghorn sumach (*Rhus typhina*) collected at Hummelstown, Pa.

Dicerca lurida Fab. The common host-plant of this insect is hickory, although it will breed in a great variety of dead trees. Adults were reared from dead blue beech (*Carpinus caroliniana*) and alder (*Alnus rugosa*) collected at Hummelstown, Pa.

Dicerca lepida Lec. This beetle breeds in dead ironwood (*Ostrya virginiana*). From material collected at Hummelstown, Pa., adults emerged from July 11 to July 29.

Dicerca scobina Chev. Breeds in the dead wood of sour gum (*Nyssa sylvatica*). Adults were reared August 5 from material collected at State College, Pa. The adults emerge late in the season and hibernate through the winter. On March 24 a living adult was taken under the loose bark of a sour gum at Hummelstown, Pa.

Dicerca americana Hbst. Two living adults were found on December 13 and January 9 at State College, Pa., hibernating under the loose bark of a dead pine.

Dicerca punctulata Sch. Found breeding in pitch pine (*Pinus rigida*) at Hummelstown, Pa.

Poecilnota cyanipes Say. An adult was reared June 6, from a *Saperda concolor* Lec. gall on a branch of large-toothed aspen (*Populus grandidentata*) collected at Milford, Pa., by Mr. H. B. Kirk.

Cinyra gracilipes Melsh: Adults were reared from dead white oak (*Quercus alba*), swamp white oak (*Quercus bicolor*) and ironwood (*Ostrya virginiana*) collected at Hummelstown, Pa. Mr. A. B. Champlain informs me that he has reared this species from dead ash collected at Harrisburg, Pa.

Melanophila fulvoguttata Harr. At Hummelstown, Pa., this insect was found breeding in the bark of dead and dying hemlocks (*Tsuga canadensis*). The work was confined entirely to the bark, and none of the larvae had entered the sapwood.

Anthaxia viridifrons Lap. Was reared during June from the sapwood of dead American elm (*Ulmus americana*) and hickory branches.

Anthaxia quercata Fab. *Anthaxia cyanella* Gory can well be united with this species, as both forms are often reared from the same stick of wood. Adults were reared May 30, from the sapwood of dead redbud (*Cercis canadensis*) branches collected at Hummelstown, Pa.; also on May 29, from the sapwood of dead (*Crataegus coccinea*) branches collected at Harrisburg, Pa., and from the sapwood of a dead white pine (*Pinus strobus*) branch collected at Manada Gap, Pa.

Anthaxia flavimana Gory. Breeds in white oak.

Chrysobothris femorata Fab. Breeds in the bark and sapwood of a great variety of dead and dying fruit and forest trees. In Pennsylvania it seems to be largely secondary in its attack.

Chrysobothris dentipes Germ. Was reared from the bark of a dead white pine (*Pinus strobus*) collected at Dauphin, Pa.

Chrysobothris blanchardi Horn. A number of adults were reared June 11, from the bark of a dead pitch pine (*Pinus rigida*) collected at Hogestown, Pa.

Chrysobothris scabripennis Lap. & Gory. Adults chopped from the sapwood of dead white pine at Charter Oak, Pa., in June.

Chrysobothris pusilla Lap. & Gory. Reared May 15 from the sapwood of a dead pitch pine (*Pinus rigida*) branch collected at Hummelstown, Pa.

Chrysobothris sexsignata Say. From material collected at Hummelstown, Pa., adults were reared as follows: On May 29, from the sapwood of dead hemlock (*Tsuga canadensis*); on July 12, from the bark of dead black ash (*Fraxinus nigra*); on June 11, from the sapwood of dead white ash (*Fraxinus americana*); on July 3, from the sapwood of a dead red maple (*Acer rubrum*); on July 17, from the sapwood of a dead swamp white oak (*Quercus bicolor*) branch. It also breeds in the sapwood of dead walnut (*Juglans nigra*) and in the injuries made by the larvae of *Agrilus juglandis* in the bark of living butternut (*Juglans cinerea*), the eggs being laid in the emergence holes of the *Agrilus* adults.

Chrysobothris azurea Lec. Breeds in the sapwood of dead alder (*Alnus rugosa*) and swamp white oak (*Quercus bicolor*) in the vicinity of Hummelstown, Pa.

Chrysobothris harrisii Hentz. Adults were reared in June from small branches of Virginia pine (*Pinus virginiana*) collected at Hummelstown, Pa.

Actenodes acornis Say. From material collected at Hummelstown, Pa., adults were reared as follows: On June 15, from the wood of dead red maple (*Acer rubrum*); on June 24, from dead beech (*Fagus americana*); on June 6, from dead black birch (*Betula lenta*); on June 10, from dead hickory branch; on June 15, from dead black oak (*Quercus velutina*). The larvae work through the heart-wood of the host-plants, often entirely riddling them.

Acmaeodera culta Web. On September 7, a living adult was chopped from a dead hickory branch at Cresco, Pa. Adults were reared August 10 from dead white oak (*Quercus alba*) branch collected at Hummelstown, Pa.

Ptosima gibbicollis Say. In the vicinity of Hummelstown, Pa., this species breeds in redbud (*Cercis canadensis*), often attacking living trees, hastening their death and decay. The larvae work in the heart-wood of the tree and the adults which appear in the spring mature in the fall and pass the winter in the pupal cells.

Eupristocerus cogitans Web. Forms galls on alder (*Alnus rugosa* and *A. incana*). The egg, which is covered with a chitinized protective covering, is deposited at a node, or at a point where the bark is rough. The egg hatches and the young larva goes beneath the bark after which it works down the stem for a short distance. It then encircles the stem, which injury later forms a gall on the plant. The life history extends over a period of two years, and the pupa cell is made at the top of the gall.

Agrilus juglandis n. sp.

Form and color of *A. masculinus*. Antennae greenish, not quite reaching beyond the middle of the prothorax, serrate from the fourth joint; head slightly convex, a feeble occipital impression, more distinct in the female; front densely punctate, becoming slightly strigose on occiput, middle of front to clypeus covered with long white pubescence.

Prothorax wider than long, narrowed at base, sides in front arcuate, lateral margin sinuate, hind angles with a well defined carina in both sexes; disk convex, with an oblique lateral depression on each side, two depressions on median line as in *A. otiosus*; surface transversely strigose. Scutellum transversely carinate, surface granulate. Elytra slightly sinuate behind the humeri, dilate behind the middle, apices separately rounded and serrulate; disk with a faint costa on each side, basal depressions shallow, sutural margin elevated behind the middle; surface closely imbricate-granulate. Body beneath more shining than above, prosternal lobe broadly emarginate; prosternal process broad, slightly narrowing, acute at tip. Pygidium without a projecting carina. First joint of hind tarsus as long as the following three joints: tarsal claws deeply

cleft, the lower portion turned inward, nearly touching that of the opposite side, claws on all three pairs of feet in both sexes similar. Length 55 mm.; width 1 mm.

♂.—All three pairs of tibiae mucronate on the inner side.

♀.—Only anterior and middle tibiae mucronate on the inner side.

Described from a large series of adults, most of which were beaten from the foliage of butternut (*Juglans cinerea*). Type collected by the author at Hummelstown, Pa., June 9, on butternut. Allotype reared from the outer bark of living butternut (*Juglans cinerea*) collected at Linglestown, Pa., by the author. Both types in the author's collection.

The beetle breeds in the outer bark of living butternut (*Juglans cinerea*). The injury made by the larva makes the tree susceptible to attack of other insects and *Chrysobothris femorata* Fab. and *Chrysobothris sexsignata* Say are often found working together with the above species.

In the vicinity of Hummelstown, Pa., the pupal stage was observed on May 15, and the first adults appeared about May 25. Mr. Champlain states that the beetle causes considerable damage to the butternut in the vicinity of Lyme, Connecticut.

In general appearance this species resembles *A. masculinus*, but according to Dr. Horn's key* it should be placed next to *A. otiosus*. It has been confused with *A. otiosus* in collections, but the males can easily be separated from the males of this species by the lack of the median line of pubescence on the ventral surface.

Agrilus otiosus Say. Hickory seems to be the common host-plant of this species, although on June 5 adults were reared from a dead branch of persimmon (*Diospyros virginiana*) collected at Rockville, Pennsylvania.

Agrilus frosti n. sp.

Form of *A. otiosus*. Antennae greenish; reaching beyond the middle of the prothorax, serrate from the fourth joint; head convex, densely punctate, becoming strigose on occiput.

Prothorax wider than long, narrowed at the base, sides feebly arcuate, more strongly in the female, lateral margin sinuate, hind angles of male faintly carinate, carina sometimes nearly obliterated in the female; disk

* G. H. Horn. The Species of *Agrilus* of Boreal America, Trans. Amer. Ent. Soc., V. 18, p. 277-336, 1891.

convex, two median depressions with an oblique lateral depression on each side, surface transversely strigose. Scutellum transversely carinate, surface granulate. Elytra sinuate behind the humeri, dilate behind the middle, apices separately rounded and serrulate; basal depressions slight, sutural margin elevated behind the middle, surface closely imbricate-granulate. Body beneath more shining than above, prosternal lobe with slight emargination, prosternal process slightly narrowing, acute at tip, median line of pubescence lacking in both sexes, first two ventral segments of male flat, but not pubescent, Pygidium without a projecting carina. First joint of hind tarsus as long as the three following joints; tarsal claws deeply cleft, the lower portion turned inward, nearly touching that of the opposite side, claws on all three pairs of feet in both sexes similar. Length 4 mm.; width .75 mm.

♂.—Front bright green, tibiae on all three pairs of feet mucronate.

♀.—Front bronze, posterior tibiae not mucronate.

Described from a series of three males and seven females. *Type* male and *allotype* collected at Framingham, Massachusetts, May 28, by Mr. C. A. Frost; two paratypes at Charter Oak, Pennsylvania, June 21, by Mr. H. B. Kirk and the author; one from Berks County, Pennsylvania, June 1, without collector's label; one Harrisburg, May 24; one Chambersburg, Pennsylvania, June 6; and one Hummelstown, June 2, by the author. Type material in the author's collection, two paratypes in the collection of the Bureau of Plant Industry.

I take pleasure in naming this species after my friend, Mr. C. A. Frost, who has determined much material for me and given me many valuable suggestions.

The species has been confused with *A. otiosus* in collections, but the lack of the ventral median pubescent stripe in the male will at once separate it from this species. The male genitalia are also different from those of *A. otiosus* and *A. juglandis*, being flattened and flared at the apex. The sides are densely punctate above and below. In *A. otiosus* and *A. juglandis* the sides of the male genitalia are nearly parallel near the apex.

The male also lacks the ciliate antennae of *A. crinicornis* and the fimbriate and truncate last ventral segment of *A. defectus*. According to Dr. Horn's key, it would come after *A. otiosus*.

The following table will serve to separate the males of the of the eastern species of the *otiosus* group.

Tibiae of male on all three pairs of feet mucronate at the inner apical angle.

Male pubescent on the median line of under side. *otiosus* Say.
Male not pubescent on the median line of under side.

Male with the sides of the genitalia nearly parallel at apex, flared in middle, sides sparsely punctate. *juglandis* n. sp.

Male with sides of genitalia flared near apex, sides densely punctate. *frosti* n. sp.

Male with the last ventral truncate and fimbriate. *defectus* Lec.

Male with antennae long, slender and ciliate on the posterior side with relatively long hairs. *crinicornis* Horn.

Agrilus masculinus Horn. Adults were reared on April 14 from the sapwood of dead box elder (*Acer negundo*) branches collected at Harrisburg, Pa.

Agrilus defectus Lec. On May 29, adults of this species were reared from the dead branches of white oak (*Quercus alba*) collected at Hummelstown, Pa.

Agrilus arcuatus Say. Adults were reared from girdled branches of the following trees: On July 18, from black oak (*Quercus velutina*) collected at Manada Gap, Pa.; on May 31, from beech (*Fagus americana*) collected at Harrisburg, Pa.; on June 7, from hickory (*Hicoria ovata*) collected at Hummelstown, Pa. The egg seems to be laid on a small twig, where it hatches and the small larva enters the bark, working its way down the cambium to the branch. Later the branch is girdled and the larva, still in the girdled part, travels from one to six inches from point of girdling, where it enters the wood and forms a pupal cell. The girdled branch falls in the spring, after which the adult emerges.

Agrilus vittaticollis Rand. Was found breeding in the living stems of shadbush (*Amelanchier canadensis*) at Dauphin, Pa.

Agrilus bilineatus Web. Breeds in oak and chestnut, often causing the death of unhealthy trees.

Agrilus anxius Gory. Breeds in various species of birch. At Speeceville, Pa., it was found to be killing the poplars (*Populus grandidentata*) which had been attacked by the poplar borer (*Saperda calcarata* Say).

Agrilus cephalicus Lec. Was reared from the sapwood of dead dogwood (*Cornus florida*). This species is often confused with *A. otiosus*, but can easily be separated by the tarsal claws.

Agrilus politus Say. Breeds in living willow and striped maple (*Acer pennsylvanicum*).

Agrilus fallax Say. Adults were reared by Mr. H. B. Kirk, from dead branches of honey locust (*Gleditsia triacanthos*) collected at New Cumberland, Pa.

Agrilus obsoletoguttatus Gory. Was reared from the dead branches of the following species, collected at Hummelstown Pa.: On June 15, from beech (*Fagus americana*); on June 2, from blue beech (*Carpinus*

caroliniana); on June 12 from ironwood (*Ostrya virginiana*); on June 9, from red oak (*Quercus rubra*); on June 17, from hickory.

Agrilus subcinctus Gory. Mr. H. A. Wenzel informs me that he takes this species on the foliage of poison ivy (*Rhus toxicodendron*), and the numbers taken indicate that poison ivy is the host-plant.

Agrilus lecontei Saund. Breeds in the wood of dead hackberry (*Celtis occidentalis*) in the vicinity of Harrisburg, Pa.

Agrilus egenus Gory. Breeds in the wood of dead black locust (*Robinia pseudacacia*) in the vicinity of Harrisburg, Pa.

Agrilus celti n. sp.

Form and color of *A. egenus*, males often more greenish. Antennae greenish, reaching the middle of the prothorax, serrate from the fifth joint, serrate joints longer than wide; head convex, with faint median impression, front densely punctate, becoming strigose on occiput, middle of front to clypeus covered with long white pubescence.

Prothorax wider than long, sides not strongly arcuate, hind angles rectangular, with a well-defined carina in both sexes; disk convex, median impressions light, lateral depressions well-marked, surface transversely strigose. Scutellum transversely carinate, surface granulate. Elytra sinuate behind the humeri, dilate behind the middle, apices separately rounded and serrulate, basal depressions slight; disk depressed, surface imbricate-granulate. Body beneath more shining than above, prosternal lobe strongly emarginate. Pygidium without a projecting carina. First joint of hind tarsus as long as the following three joints; tarsal claws broadly toothed at base, claws similar on all three pairs of feet in both sexes. Length 4.5 mm.; width 1 mm.

♂.—Front more densely pubescent, greenish; prosternum densely pubescent, with pubescence extending on the second abdominal segment, first and second abdominal segments broadly but not deeply channelled; sides of genitalia nearly parallel.

♀.—Front less densely pubescent and less bright, without the stripe of dense white pubescence on under side, first and second abdominal segments without channel.

Described from a large series of adults reared from dead branches of hackberry (*Celtis occidentalis*), collected at Hummelstown, Pa., by Mr. H. B. Kirk and the author.

Type male and *allotype* in author's collection and reared June 3, from dead hackberry (*Celtis occidentalis*) branches collected at Hummelstown, Pa., by the author.

This species has been confused with *A. egenus* in collections, and although it is hard to separate the females from those of *A. egenus*, the males may be easily separated by an examination of the genitalia.

In *A. celti*, the sides of the male genitalia are nearly parallel, while in *A. egenus* there is a decided flare near the apex.

According to Horn's key, this species would come after *A. egenus*.

Pachyscelus laevigatus Say. At East Falls Church, Virginia, the larvae of this species were found mining in the leaves of *Lespedeza virginica*, *Meibomia obtusa* and *M. viridiflora*. The larva makes a small round cell between the layers of the leaf, where it passes the winter. In spring transformation occurs, and the adult emerges by the lifting of a small hinged lid.

New or Interesting Psyllidae of the Pacific Coast (Homop.).

By D. L. CRAWFORD, College of Hawaii, Honolulu.

Mr. W. M. Giffard, of Honolulu, has during the past few years collected a considerable number of Psyllidæ in California and Oregon, representing some twenty-four species, one of which is new and another represents a new variety of a previously known species. Several others are more or less interesting because of the added distributional data furnished.

The types of the new species and variety are deposited in the Museum of the California Academy of Sciences, San Francisco, by request of Mr. Giffard.

Aphalara* (*Anomocera*) *anomala Crawford, U. S. Nat. Mus. Bul. 85, p. 37, 1914.

This anomalous species of *Aphalara* with nine-segmented antennæ and a supernumerary marginal cell in the forewings was described from three females from northern California. Mr. Giffard has collected three additional females from Niles Canyon, Alameda County, California. These are closely similar to the type.

Euphyllura arctostaphyli Schwarz. Crawford, U. S. Nat. Mus. Bul. 85, p. 116, 1914.

There is a good series of this species and its variety *niveipennis* Schwarz in Mr. Giffard's collection. Eight specimens

from Placer and Sonoma Counties, California, typically represent the species and seven from Placer and Lake Counties, California, represent the variety, while there are 36 others from Placer, Lake and Sonoma Counties which are more or less intermediate in the color of the fore wings and dorsum. As most of these latter approach the variety more closely than the species, I have grouped them with the former, but the standing of this variety appears now to be less certain. From the distributional data it appears that the variety *niveipennis* is not a regional one but rather a case of albinism occurring wherever the species is found.

***Euphyllura arctostaphyli bifasciata* new variety.**

This variety resembles the species in size, structure of body and general appearance, but differs in wing colors. The forewings have a conspicuous white or pale band transversely at base and another near apex which is more or less angled and does not extend entirely across wing. The color of the remainder of the wing varies from dark as in the species to very light brown as in the darker representatives of the variety *niveipennis*.

In the series of specimens from which the writer prepared the description of this species in his monograph were a few specimens with this type of wing but it was deemed advisable not to separate these few into a variety. However, Mr. Giffard now presents seventeen specimens of both sexes and no truly intermediate forms to indicate that this is a variable characteristic. The statement, therefore, in the monograph (U. S. Nat. Mus. Bul. 85, p. 116), "forewings . . . often with a prominent white fascia at basal third and sometimes a whitish area or fascia subapically," should be omitted from the description of the species and applied to the variety *bifasciata*.

Described from seventeen males and females collected by W. M. Giffard at Donner Lake, Placer County, California, August 24, 1917, and at Summit in the same county.

Holotype, female (No. 463), in the collection of the California Academy of Sciences.

***Arytaina montana* new species.**

Length of body 1.6 mm.; length of forewing 1.9 mm.; width of head 0.6 mm. General color brown to black; vertex, dorsal surface of genal

cones and pronotum dirty white; dorsum of thorax with pale streaks and spots; in the lighter forms the dorsum is light with darker streaks and spots; antennae pale on basal portion, remainder dark; forewings whitish, with brown spots scattered over surface.

Head not strongly deflexed; vertex with a foveal impression discally on each side of median line; genal cones nearly as long as vertex, rounded at apex, slightly divergent. Forewings rounded at apex, conspicuously spotted, pterostigma very small, short.

♂.—Anal valve longer than forceps, broad at base and tapering toward apex somewhat. Forceps broader and shorter than in *A. ceanothæ* tapering gradually to a blunt point at apex. ♀.—Genital segment not as long as rest of abdomen, thick at base and tapering to acute apex and slightly upcurved.

Described from four males and four females all collected at Fallen Leaf Lake, El Dorado County, California, August 21, 1916, by W. M. Giffard.

Holotype, male (No. 464), in collection of the California Academy of Sciences.

Of the species previously described, *A. ceanothæ* Crawford (U. S. Nat. Mus. Bul. 85, p. 130) appears to be most closely similar in structure and appearance, except that in the species referred to the wings are perfectly clear.

A New Parasitic Cynipid Reared from a Clover Aphid (Hym.).

By L. H. WELD, Bureau of Entomology, U. S. Department of Agriculture.

Through Mr. H. L. Viereck of the Biological Survey there came into my hands recently for examination a series of parasitic Cynipidae reared from a clover aphid at Twin Falls, Idaho, by Mr. Ralph H. Smith. The species runs to the genus *Charips* (formerly known as *Allotria* or *Xystus*) and seems to be new. An examination of the literature shows that only eight American species of this genus have been described, one in the subgenus *Bothrioxysta* and the rest in the typical subgenus. From the published descriptions and from a study of the types of four of the species in the United States National Museum, the following synopsis may indi-

cate the relation of the species. The size and shape of the radial cell seem to give good specific characters and it is best studied of course in balsam mounts, but a two-thirds objective and ocular micrometer will serve the purpose on well mounted pinned specimens. As here used the "radial cell ratio" is the length of the radial cell divided by the width (inside measurements) and the "cell to wing ratio" is the maximum width of the front wing divided by the greatest width of the radial cell.

Genus CHARIPS Haliday.

Scutellum with 1-2 pits.....subgenus *Bothrioxysta* Kieffer.
♀; bred from *Siphonophora ambrosiae* on *Ambrosia*; Massachusetts

ambrosiae Ashmead.

Scutellum without pits.....subgenus *Charips* Haliday.
"Head higher than broad."

♂ and ♀; bred from an aphid on *Tanacetum*; Massachusetts

areolata Kieffer.

♂ and ♀; bred from *Aphis atriplicis*; Massachusetts

hayhursti Kieffer.

Head broader than high or not stated.

♀ antennae 14-segmented.

♂ and ♀; bred from aphid on pine in Florida. **lachni** Ashmead.

♀ antennae 13-segmented.

"Radial cell almost twice as long as broad"; female; California

bakeri Kieffer.

Radial cell ratio 1:2.14; cell to wing 1:5.4; male; reared from orange aphid, Florida.....**xanthopsis** Ashmead.

Radial cell ratio 1:2.3; cell to wing 1:5.0; segments 3, 4, 5 in male antenna all excised; male and female.....**brassicae** Ashmead.

Radial cell ratio 1:2.3; cell to wing 1:8.6; female; reared from tomato aphid in Florida.....**megourae** Ashmead.

Radial cell ratio 1:2.4; cell to wing 1:7.0; segments 3, 4, 5 in male antenna not excised; male and female.....**leguminosa** Weld.

Charips (Charips) leguminosa new species.

♀.—Polished black, legs and first five segments of antenna testaceous.

Head broader than thorax with scattered white hairs; facial line .8 and axial .56 of transfacial; lateral ocelli farther from each other than from eye; interocular area slightly broader than high; malar space equal to ocell-ocular; antennae 13-segmented, first and second stout and subequal, 3-5 slender and becoming shorter, 6-13 incrassated and increasing in length to 12th with last one and one-half times preceding, all last eight showing in balsam about four longitudinal ridges in the middle of each of which is an elliptical clear spot.

Pronotum with scattered white hairs. Mesoscutum broader than long, without trace of grooves but a few microscopic white hairs. Scutellum half as long as mesoscutum, conical in outline but rounded behind, no pits at base. Propodeum with two outwardly bent carinae enclosing a

smooth area broader than high, lateral areas pubescent. Legs slender, femora infuscated, all tarsi longer than tibiae, claws simple. Wings longer than body, with distinct dark veins, radial cell closed, its length divided by width (inside measurements) gives a quotient of 2.4, maximum width of wing divided by width of radial cell gives 7.0, second abscissa of radius one and one-half times first, from bottom of radial cell a spur sticks straight downward two-thirds as long as first abscissa of radius, a perpendicular line erected at middle of longitudinal axis of wing would just touch apex of radial cell, surface pubescent with dark hairs, margin ciliate.

Abdomen nearly as long as thorax, longer than high, with ring of hairs at base. Using width of head as a base the length of mesonotum ratio is 1.0, antennae 2.6, wing 3.4.

♂.—Antenna 14-segmented, less abrupt change in size and color between segments 3-5 (which are not excavated) and the last nine, length 2.6 times width of head.

Length of five males .55-.9 mm., average .7 mm. Length of eight females .7-.9 mm., average .8 mm.

Type: Cat. No. 22589 U. S. Nat. Mus. Type female, allotype and one male and four females paratypes. One pair paratypes with Acad. Natl. Sci. Phila., one pair in Coll. Biol. Survey, and two females (one in balsam) and one male with author.

Type-locality: Twin Falls, Idaho.

Biology: Reared from *Aphis bakeri* Cowan, the clover aphid, June 15 and in July, 1919, by Mr. Ralph H. Smith, who says he has made repeated unsuccessful attempts to rear this Cynipid as a parasite of the aphid but on two occasions reared them in cages along with *Aphelinus lapsiligni* Howard, the most important parasite of this aphid. He is therefore inclined to believe that the *Charips* is not a primary parasite but is a parasite of *Aphelinus lapsiligni* Howard instead.

Labenidae, a New Family in the Ichneumon-oidea (Hymen.).

By HENRY L. VIERECK, U. S. Bureau of Biological Survey,
Washington, D. C.

Labena Cresson, the following new genus and possibly *Apechoneura* Kriechbaumer differ from *Grotea* Cresson and most other, if not all other, Ichneumonidae in having the

abdomen inserted high up on the propodeum, like genera in the Evaniidae, and are for this reason referable to a separate family.

PSILOPARIA new genus.

Presumably related to *Apechoneura* Kriechbaumer, of which it may prove to be a synonym but from which it appears to differ in its armed cheeks. Has also characters in common with *Labena* Cresson, *Grotea* Cresson, and *Megarhyssa* Ashmead.

Type: Psiloparia maculata new species.

Psiloparia maculata new species.

Type: No. 4119, The Academy of Natural Sciences, Philadelphia, Pennsylvania.

Type locality: Quebrada, Hacienda Guachipelin, Guanacaste, Costa Rica, Jan. 15, 1910 (Tristan and Calvert).*

♀.—Length 16 mm.; sheaths of the ovipositor 16 mm.; antennae 13 mm.; body polished, head and thorax mostly yellow with reddish and black marks, abdomen mostly reddish with a blackish tinge. Facial line: transfacial line : : 44 : 55, eyes slightly emarginate on the inner margin opposite the upper edge of the antennal fossa; antennocular line: facial line : : 3 : 44; front mostly reddish, with an impression on each side back of the antennal fossae, the impressions separated from each other by a median longitudinal crista that extends down between the antennal fossae where it is best developed a short distance below the upper edge of the face; front on each side elevated into a welt, along the eye margin, that is higher than the adjoining edge of the eye and provided with a few coarse pits; face yellow except for a submarginal, longitudinal, dark stramineous stripe on each side, covered with large, shallow adjoining or nearly adjoining punctures the diameter of some of which : the antennocular line : : 2 : 3; face elevated above the edge of the adjoining eye margin along which it is transversely striate, and slightly convex, separated from the clypeus and the malar space by a furrow that is deepest between the malar space and the face; width of clypeus : length down the middle : : 15 : 6; basal half of clypeus transversely oblong, transversely striate and separated from the apical half by a transverse carina, the apical half smoother than the basal half but yellow like the basal

[* For notes on this locality see Calvert, A. S. and P. P.: A Year of Costa Rican Natural History (New York, Macmillan, 1917), pp. 433 et seq. The "Quebrada" referred to above is the "ablution brook" mentioned on p. 435.—P. P. CALVERT.]

half except for a median blackish spot; mandibles black and polished, heavier than in *Labena grallator* Say, their teeth poorly developed, rudimentary and rounded, greatest width of under side of mandibles : greatest length of mandibles : : 8 : 14; outer surface of mandibles triangular in outline, the height of the triangle : the length : : 6 : 14; labrum visible between the mandibles and the clypeus, cheeks yellow, rectangular beneath and back of the eye, more highly developed than in *Megarhyssa lunatrix* Fabricius, occipital carina represented only by a band-like carina on the lower third of the cheeks and extending to the gular carina which it meets almost at the insertion of the mandibles; at the lower posterior angle of the cheek half way between these two carinae is a broad, flattened, rounded tooth; palpi similar to the palpi in *Megarhyssa lunatrix* Fabricius; occiput black and reddish; antennae much the same as in *Megarhyssa lunatrix* F., except in the terminal joint which in this species is shaped more like the end joint of the index finger than in *M. lunatrix* F.; antennae mostly dark reddish, the apical fourth mostly yellowish, contrasting with the darker tip and darker basal three-fourths, third, fourth and fifth joints of the flagel blackish above.

Pronotum mostly reddish, its sides partly yellow, partly black, its hind margin straight, a tooth near its lateral margin and half-way between the anterior margin and the tegulae, directed outward and backward; dorsulum reddish except for a yellow anterior margin, a median, longitudinal yellow mark and a posterior black mark, uniformly, coarsely and transversely ribbed, notauli completely wanting, mesopleurae mostly yellow, anterior margin and prepectus black, a reddish and black mark on each posterior, upper fourth, scutel yellow with its posterior margin black, with three transverse carinae, the first and second arcuate, the third straight; metanotum yellow, with a reddish and black posterior margin and with an almost semilunar area bounded by an arcuate ridge anteriorly and a straight ridge posteriorly, tegulae oblong, yellowish and brownish stramineous.

Wings almost colorless except as follows: apical eighth of wings mostly covered with an almost circular dark brownish macula; venation much as in *Megarhyssa lunatrix* F., notably differing in the absence of a ramellus, in the recurrent vein being received by the areolet before but near the middle and in the submedian vein joining the nervulus at the junction of its upper third with its middle third, nervellus not interstitial with the transverse cubitus, veins blackish, except for the costa which is dark stramineous and concolorous with the stigma.

Legs short, mid and hind tarsi hardly longer than their tibiae, fore tarsi nearly twice as long as their tibiae, legs mostly yellowish, tarsi dark with yellowish tips except for the mid and hind onychii which are black or blackish like their claws, hind coxae, trochanters femora and tibiae reddish, hind tarsi with the basal joint mostly blackish.

Metapleurae almost square, yellow, reddish and black along the anterior edge; propodeum with its upper aspect mostly reddish on the basal half

and mostly yellow on the apical half, posterior face yellowish except for a median blackish and reddish area, distance from metanotum to coxal line as viewed from behind: distance between coxal line and abdominal line : : 34 : 16; distance between coxal line and abdominal line : length of hind coxae : : 16 : 50.

Abdomen petiolate, length of first tergite : its width at apex : : 70 : 19; length of first tergite : length of second : : 70 : 45; abdomen beyond fifth tergite almost bulbous, abdomen reddish stramineous throughout, more or less covered with blackish stains, first tergite with a yellow streak down the middle on its basal two-thirds, lateral margins of tergites, like the sternites more or less yellowish, sheaths with their apical fifth pale yellow, rest of sheaths black, ovipositor castaneous.

To Proposers of New Genera.

[The following has been received through Dr. L. O. Howard.]

This ought to be quoted in every entomological journal on earth and special "marked copies" sent to men of Walkerian tendencies.—C. F. BAKER, Los Baños, Philippine Islands.

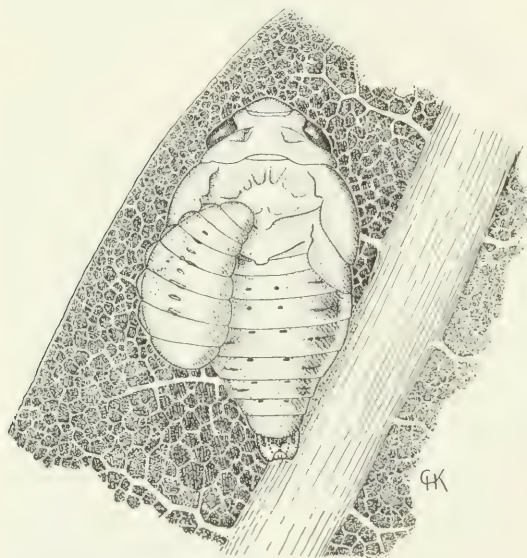
REMPHAN

"The remarks of M. Guerin Meneville on this genus are so apposite, and are so much more applicable at the present time, that we think we are doing some service in calling attention to them here. He says, 'The genus *Remphan* of Mr. Waterhouse, it seems to us, ought to be placed near *Macrotoma*. The author has forgotten to state its affinities, after having given its generic characters, commencing with the head and finishing with the abdomen, just as is the custom with many entomologists, and which is very convenient for celerity. In fact, in thus freeing one's self from the researches which ought to be really made in order to fix the place of a new genus, the task is reduced to almost mechanical work; for it is only to say all or almost all that can be seen of an insect to describe it, and leave to the poor reader the care and perplexity of picking whatever seems good to him.' Mr. Waterhouse is, however, one of the last that we can complain of in this respect; but the systematic determination of some to content themselves with the barest descriptions, without giving the slightest clue to the position of their new genera, ought to disentitle them to the right of priority in the event of any of these genera being afterwards described in a conscientious and recognizable manner. Of course, it is a different matter when it is stated of any new genus that its affinities are doubtful or unknown to its author. As M. Guerin Meneville observes, these mechanical descriptions can be done by any one; the real test of competency will be found in the observation which every conscientious writer will feel it his duty to make in instituting, or proposing to institute, a new genus."—1866, Pascoe, Proc. Zool. Soc., 535.

An Unusual case of Parasitism on *Clastoptera obtusa* Say (Hemip., Cercopidae; Dip., Drosophilidae).*

By W. J. BAERG, Fayetteville, Arkansas.

In the summer of 1917, during the first two weeks in July, when I was collecting the nymphal stages of *Clastoptera obtusa* on alder, *Alnus americana*, I found the spittle masses produced by these nymphs inhabited by small dipterous larvae. Many of these larvae I found attached to the nymphs of the *Clastoptera*. Some of them I found lying around loose in the spittle masses. As a rule I found but one dipterous maggot to one spittle mass. No maggots were found outside of the spittle.



On taking one of the maggots and placing it near a *Clastoptera* nymph, it would immediately proceed to attach itself on the side of the abdomen and then bring up its caudal end and place it on the back of the nymph. See the accompanying text-figure.

The maggots attach themselves by means of the mandibular hooks. As a rule I found but one maggot attached to one host, in a few instances I found two maggots attached to one nymph. The place of attachment on the spittle

* From the Entomological Laboratory of Cornell University, Ithaca, New York.

insect is usually on the side of the abdomen between the 4th and 5th segments. After examining about a hundred specimens I failed to find that the maggots were causing any injury to the nymphs of the *Clastoptera*, with one exception. This nymph appeared to be considerably bruised and irritated on the sides of the abdomen where the attachment is usually made.

The maggots that I brought into the laboratory pupated in a day or so, and the adults emerged about a week later. These were identified by Dr. A. H. Sturtevant as *Drosophila inversa* Walker. The pupae of the *Drosophila* I found in both the spittle masses and in dry places on the twigs and leaves of the alder.

Upon placing a number of the pupae of *Drosophila inversa* in a vial, I succeeded in rearing along with a number of the corresponding adults a few Hymenopterous parasites. Mr. L. H. Weld identified the parasite as a "parasitic Cynipid, one of the Eucoilinae." Lacking adequate material, Mr. Weld was unable to place it definitely.

The *Drosophila* seems to specialize on *Clastoptera obtusa*. There were numerous nymphs of *Clastoptera proteus* on Dogwood and Viburnum bushes in the immediate vicinity of the alders on which I collected, but I failed to find any maggots in the spittle masses of *Clastoptera proteus*.

According to all the observations that I was able to make, *Drosophila inversa* in its feeding habits marks no exception to the other members of the genus. It apparently feeds on plant sap in the form of spittle produced by the *Clastoptera*. It seems to be parasitic only in so far that it utilizes the excess of the sap drawn from the plant tissues by the spittle insect, and in that it uses the spittle insect as a means of transportation.

Observations similar to the ones given in this paper are recorded by C. N. Ainslie, Canadian Entomologist, 38: 44.

I wish to thank Dr. Sturtevant and Mr. Weld for the identification of material. The drawing was made by Mr. C. H. Kennedy, then of Cornell University.

ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., JANUARY, 1920.

SOME NEW YEAR'S RESOLUTIONS FOR THE ENTOMOLOGIST

1. Label *legibly* all specimens as to locality and date of capture and collector's name; any other data that bear on the insect's relations to its environment are also desirable.

2. When about to send insects by mail or express, first read the editorial in the *News* for January, 1915, page 33.

3. Check up identifications of material with the original descriptions as far as possible.

4. When writing a paper for publication see that it is easily legible and leave a blank margin of half an inch or more on the left edge.

5. Follow the Wistar Institute's or Muttkowski's (*Annals Ent. Soc. America*, iv, 194-217) suggestions for the preparation of scientific papers.

6. Add the names of the Order and the Family, to which the insects treated belong, to the title of your paper.

7. Follow the International Rules of Zoological Nomenclature in the forming of new generic and specific names.

8. Specify the genotype of each new genus you propose.

9. Specify the individual type or types (preferably a single type), the type locality and the museum or collection in which the type or types are located, whenever describing a new species.

10. Label specimens which have served as types, or as originals of published figures or descriptions, with brief but sufficient references to the place of publication.

11. When identifying a specimen, add your name, followed by the abbreviation "det." and the year to the label bearing the generic and specific names.

Notes and News

Changes of Address.

Mrs. Annie Trumbull Slosson has removed to 36 Gramercy Park, New York City.

The address of Mr. Edward A. Klages has been changed to 95 Belvidere Street, Crafton Station, Pittsburgh, Pennsylvania.

A Biography of Miss A. M. Fielde.

Helen Norton Stevens is the author of a Memorial Biography of Adele M. Fielde. Published by The Fielde Memorial Committee, New York, Philadelphia, Chicago, Seattle. Press of Pigott Printing Concern, Seattle, 1918. 8vo, pp. 377, illustrated. Miss Fielde, it will be recalled, published a number of papers on the habits and faculties of ants, as mentioned in an obituary notice in the NEWS for April, 1916, pages 191-2.

Sentiment For and Against the Metric System.

Apropos of our editorial in the NEWS for June, 1919, page 175, the World Trade Club of San Francisco states that, up to October, 1919: "Out of 58,226 petitions relating to exclusive use of metric weights and measures in U. S. America, now in the keeping of the Bureau of Standards, Department of Commerce, 57,800 petitions or 99.27% favor this progress, and only 426, or less than 1%, oppose it.

"New petitions are coming every day. The classification to date shows the following distribution of petitions: Manufacturing concerns, engineering concerns, engineers, architects, contractors were 9968 in favor and only 154 against meter-liter-gram. Chambers of commerce, trade organizations, exporters, importers were 9974 in favor and only 51 against meter-liter-gram. Educational institutions, beneficent organizations, individuals in professions were 22,443 in favor and only 74 against meter-liter-gram. Similarly, in all other vocations, although petitioners were free to declare for or against meter-liter-gram, less than 1% objected; and over 99% favored metric standards exclusively."

Increase Asked to Fight Mosquitoes (Dip. Culicidae).

Under this heading the Philadelphia *Public Ledger* of December 8, 1919, says: "The Atlantic County [New Jersey] Mosquito Commission will ask the Board of Freeholders for an appropriation of \$30,000 for the work mapped out for next year. The sum appropriated last year was

\$26,000, and the increased cost of labor, material and appliances, it is said, necessitates a larger sum.

"New drainage contemplated includes the meadows south of Middle River above Sedge Creek and between Middle River and the Great Egg Harbor River, and also for the salt marsh on Brigantine Island. The new road across the meadows from Absecon will make it necessary to change the system of drainage in that vicinity.

"Among the plans of the commission is the stocking of the meadow streams with fish that subsist on the larvae of the mosquito."

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded.

The numbers in **HEAVY-FACED TYPE** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of papers containing new species are all grouped at the end of each Order of which they treat.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

4—Canadian Entomologist, London, Canada. 5—Psyche, Cambridge, Mass. 9—The Entomologist, London. 10—Proceedings of the Entomological Society of Washington, D. C. 12—Journal of Economic Entomology, Concord, N. H. 15—Insector Inscitiae Menstruus, Washington, D. C. 17—Lepidoptera, Boston, Mass. 33—Annales de la Societe Entomologique de Belgique, Brussels. 53—Nature Study Review, Ithaca, N. Y. 69—Comptes Rendus, des Seances de l'Academie des Sciences, Paris. 89—Zoologische Jahrbucher Jena. 90—The American Naturalist, Lancaster, Pa. 91—The Scientific Monthly, Lancaster, Pa. 100—Biological Bulletin of the Marine Biological Laboratory, Woods Hole, Mass. 101—Journal of The Linnean Society of London.

GENERAL. Diven, E. L.—Obituary note. 10, xxi, 177-8. Erhardt, E.—Zur kenntnis der innervierung und der sinnesorgane der flugel von insecten. 89, xxxix, Abl. f. Anat., 293-34. Loeb, J.—Natural death and the duration of life. 91, ix, 578-85. McAtee, W. L.—Piscatorial entomology. 4, 1919, 257-8. Mottram, J. C.—Some observations on the feeding-habits of fish and birds, with special reference to warning coloration and mimicry. 101, xxix, Zool., 47-60. Swynerton, C. F. M.—Experiments and observations bearing on the explanation of form and coloring. 101, xxxiii, Zool., 203-385.

GENETICS, ETC. **Lancefield, D. E.**—Scarlet an autosomal eye color identical with sex-linked vermilion. **100**, xxxv, 207-10.

ARACHNIDA, ETC. **Downing, E. R.**—The burrowing spider of the dunes and its chief enemy. **53**, xv, 317-21.

NEUROPTERA. **Macnamara, C.**—Further remarks on Collembola. **4**, 1919 241-5 (cont.).

ORTHOPTERA. **Cuenot, L.**—La coaptation des femurs antérieurs et de la tête chez les Phasmes. **69**, clxix, 835-8. **Lucas, W. J.**—Orthoptera in Captivity. Preserving Orthoptera. **9**, 1919, 249-52.

HEMIPTERA. **Baker, A. C.**—*Wilsonia*—A correction. **4**, 1919, 253. **Davis, J. J.**—Correction (Aphididae). **4**, 1919, 263. **Ferris, G. F.**—Notes on Coccidae—IV. **4**, 1919, 249-53. **Riley, C. F. C.**—Some habitat responses of the large water-strider, *Gerris remigis*. **90**, liii, 483-505.

Davidson, W. M.—New aphids from oaks. **4**, 1919, 245-8. **Poppius, B.**—Uebersicht der Pilophorus arten nebst beschreibung verwandter gattungen. **33**, lviii, 237-54. **Poppius, B.**—Einige neue Miriden gattungen und arten aus Nord-Amerika und Cuba. **33**, lviii, 255-61. **Swain, A. F.**—A synopsis of the Aphididae of California (Univ. California Pub., Ent., iii, 1-221).

LEPIDOPTERA. **Dean, F. R.**—A freak *Catocala palaeogama* var. *phalanga*. **17**, iii, 84. **Gunthrop, H.** A butterfly new to Kansas. **4**, 1919, 257. **Mosher, E.**—Notes on the pupae of the European corn borer, *Pyrausta nubitalis*, and the closely related species, *P. penitalis*. **12**, xii, 387-9. **Strand, E.**—Lepidopterorum catalogus. Pars. 22. Arctiidae. Subf. Arctiinae. 416 pp.

DIPTERA. **Alexander, C. P.**—The crane-flies of New York. Pt. 1. Distribution and taxonomy of the adult flies. (Cornell Univ. Agr. Exp. Sta., Mem. 25, 767-993.) **Bonne-Wepster & Bonne.**—Four new South American mosquitoes. **15**, vii, 105-13. Description of the larvae of *Wyeomyia aphobema*. **15**, vii, 114. **Brues, C. T.**—The occurrence of *Anopheles punctipennis* in Northern New England. **5**, xxvi, 143. **Goetghebuer, M.**—Note a propos de l'accouplement de *Johannseniella* (Ceratopogon) nitida. **33**, lviii, 202-204. **Grimshaw, P. H.**—The collection and preservation of diptera. (Scottish Nat., 1919, 151-6.) **de Meijere, J. C. H.**—Broon's klassen und ordnungen des tier-reichs. Bd., v, Abt., III, 1-64. **Mosier & Snyder.** Notes on the seasonal activity of Tabanidae in the lower everglades of Florida. **10**, xxi, 186-96.

Alexander, C. P.—New species of Eriopterine crane-flies from the United States. **15**, vii, 143-48. **Dyar, H. G.**—A revision of the American Sabethini of the Sabethes group by the male genitalia. **15**, vii, 114-42. The larva of *Xanthopastis timias* again **15**, vii, 149. A new subgenus of *Culex*. **15**, vii, 150. **Malloch, J. R.**—A new species of

the genus *Tachydromia* from Illinois (Emphididae). **4**, 1919, 248. A new species of Phoridae from Illinois. **4**, 1919, 256-7.

COLEOPTERA. **Blackman, M. W.**—Notes on several species of *Pityophthorus* breeding in the limbs and twigs of white pine. **5**, xxvi, 134-42. **Fink, D. E.**—Hibernating habits of two species of lady birds. **12**, xii, 393-5. **Portevin, M. G.**—Silphides et Liodides nouveaux. **33**, lviii, 190-198. **Vandavelde, G.**—La construction de la coque ovigere de l'*Hydrophile*. **33**, lviii, 205-8. **Weiss, H. B.**—Notes on *Eustrophus* bicolor, bred from fungi. **5**, xxvi, 132-33. **Weiss, H. B.**—*Cataroma nigrutulum* and its fungus host. **4**, 1919, 255-6.

Fall, H. C.—The North American species of *Coelambus*. (J. D. Sherman, Jr., Mount Vernon, N. Y. 19 pp.) **Fisher, W. S.**—Descriptions of new N. Am. *Ptinidae*, with notes on an introduced Japanese species. **10**, xxi, 181-5. **Wickham, H. F.**—Two new sps. of *Asaphidion* from North Am. (*Carabidae*). **10**, xxi, 178-81.

HYMENOPTERA. **Goodrich, E. S.**—Notes on the bionomics, embryology, and anatomy of certain H. *Parasitica*, especially of *Microgaster connexus*. **101**, xxxiii, Zool., 387-416. **Wheeler, W. M.**—A singular neotropical ant (*Pseudomyrma filiformis*). **5**, xxvi, 124-31.

Bequaert, J.—The nearctic *Psammocharids* of the genus *Aporinellus*. **5**, xxvi, 116-23. **Weld, L. H.**—A new oak gall from Arizona. (*Cynipidae*.) **4**, 1919, 254-5.

LIBELLULINEN MONOGRAPHISCH bearbeitet von DR. F. RIS, of Rheinau, Switzerland. Being Fascicules IX-XVI (2e partie) of the Collections Zoologiques du Baron Edm. de Selys Longchamps, Catalogue Systematique et Descriptif. Bruxelles, Hayez, Impr. des Académies, 1909-1919. 4to. 1278 pp., 692 text-figs., 8 colored plates.

This is one of the most extensive taxonomic, entomological works of recent years. Its completion has been delayed by the war, for while fascicules IX-XVI (1re partie) were published in 1909-1913, the second part of fascicule XVI, comprising pages 1043-1278, although printed in 1916, was not distributed, even in Belgium, until March 1, 1919. The cause of this delay has been explained by a note by M. Severin, in the NEWS for October, 1919, pages 229-230. While part 1 of fascicule XVI terminated the main text, this last installment of 1919 forms a supplement (pp. 1043-1228) to all the preceding fascicules,* gives a Verzeichniss der Literatur of the subfamily (pp. 1229-1245), a systematic list, with page

* The largest collections furnishing the supplementary material are those of Mr. E. B. Williamson, of Bluffton, Indiana, made in Guatemala in 1909 and (with his father, Mr. L. A. Williamson, and Mr. B. J. Rainey) in British Guiana and Trinidad in 1912.

references, of the 120 genera and 556 species recognized (pp. 1247-1258) and an alphabetical index of the taxonomic names (pp. 1259-1278).

It is distinctly astonishing to find that as far back as 1893 the known genera and species of this subfamily were already reckoned at 104 and 525, respectively.* Dr. Ris has admitted many species and genera described since that time, but he has also relegated many of the earlier names to the synonymy or to the rank of subspecies, for which latter he has employed trinomials.

It is of interest to note the different bases upon which successive writers have founded their classifications of the subfamily Libellulinae, which, even in Burmeister's *Handbuch* of 1839, was represented by the single genus *Libellula*. Newman, indeed, in 1833, proposed a subdivision into genera differing in the shape of the abdomen. Rambur, in 1842, disregarding these, used a venational character for his first dichotomy of the Libellulides, followed in the next four by differentials drawn from the abdomen and the eyes; the four genera still remaining were then distinguished by three venational, one vulvar and one thoracic character. The classification of the Libellulines of Europe into two genera by de Selys and Hagen, in 1850, is primarily venational, while the 12 genera employed by Hagen in his *Synopsis of the Neuroptera of North America* (1861)—9 of them new—were largely founded on characters drawn from the eyes, the posterior lobe of the prothorax, the abdomen, the legs and the external genitalia and only to a slight degree from the wings. Brauer (1868), dealing with the world fauna, raised the number of genera to 40 and, although making an increased use of the venation, relied to a greater extent on the other Hagenian differentials. The diagnoses of the 88 genera recognized by Kirby (1889) are predominantly venational, much more so than his Table of Genera, and Karsch (1890) emphasized the same feature, while the reviewer, in the *Biologia Centrali-Americana* (1905), made the hind prothoracic lobe the primary character, closely followed by venation.

Dr. Ris has placed the genera of the Libellulinae in ten groups,† designated by numbers and based chiefly on the arrangement of the wing-veins, although other features are by no means disregarded. He expressly says: "Die folgende Gattungs-tabelle ist fast ausschliesslich auf die Flügeladerung aufgebaut; von andern Merkmalen ist nur noch der Bau des Prothorax in grösserm Umfange herangezogen." It is in the resemblances of the venation of such a Libelluline as *Hypothemis* to that of the

* Trans. Amer. Ent. Soc. XX, p. 207.

† To three of these groups Dr. Ris gives names: VIII. Die *Trithemis*-Gruppe, IX. Die *Macrothemis*-Gruppe, X. Die *Tamea*-Gruppe. Dr. Tillyard (*Biology of Dragonflies*, 1917, pp. 269-273) has a synopsis of these groups, which he calls tribes; he has, however, united Dr. Ris's groups IV and V into one tribe and VIII and IX into one tribe, thus 8 tribes in all; to these tribes he gives names.

Gomphine *Agriogomphus* and to that of the Corduline *Cordulephya* that he finds preserved the remains of a common primitive form of the Anisopterous wing and which, in addition to the similarity of front and hind wings, offers him a starting-point for a phylogenetic arrangement of the Libelluline genera. He has chosen to put the generic table in a form "more difficult to use, but giving a truer presentation of the natural system, rather than to construct a dichotomous table for mechanical identification," as the realization of the former idea seemed to him to be more important than to help the beginner. It must be admitted that, in practice, the reference of an unfamiliar form to its proper group by this table is not always easy.

Very full bibliographical references for the genera and especially for the species are given up to 1915, so that for this subfamily the catalogues of Kirby and of Muttkowski are superseded by the present work. After each reference under a species the locality or country to which that citation applies is given in parentheses, a very useful addition. The material studied for this monograph is listed under the museums or collections to which it belongs, so that the geographical distribution of any species can only be ascertained by collating and rearranging these data—a feature which can not be praised. Special attention has been paid to pointing out any differences found between specimens of the same species from different localities, even where such are not given subspecific rank.

Dr. Ris has rightly perceived that a most important task called for in the execution of this monograph, where so many forms had already been described, was that of critical comparison to determine the status of those previously named and he has exercised this function throughout, not hesitating to express in the supplement views different from those put forth in some earlier fascicules.

The typography is very clear. Dr. Ris's photographs of wings and M. Menger's drawings of genitalia and other details are reproduced as excellent half-tones in the text. The colored plates show entire insects in most cases. The paper is of a finish correctly designated as elegant, but, alas, with a weight which is serious when the fascicules are handled together.

The last words of the introduction to fascicule XVI, part 2, may be freely rendered thus: "As I now give out this great work from my hands, I am very conscious—more so than at its beginning—that it is not a conclusion but a commencement, a foundation on which more can be built, more easily and more safely than before the extensive material was collected and sifted." For that collecting and sifting we offer our thanks and our praise to the author, our hearty congratulations for his execution of the "legacy" received from the great Belgian master. Only after we have studied his work in detail, by comparisons with the insects of which it treats, can we presume to fully appreciate its value.

PHILIP P. CALVERT.

Obituary

GEORGE BRINGHURST CRESSON, son of Ezra Townsend Cresson and the late Mary A. (Ridings) Cresson, died at his home in Swarthmore, Pennsylvania, on October 18, 1919. He was born in Philadelphia, November 15, 1859, and attended public and private schools in that city. It is natural to think that an inherited tendency from his father, the well-known pioneer in American hymenopterology, and from his maternal grandfather, James Ridings, collector of insects, as well as home environment, led him to become conservator of the Entomological Section of the Academy of Natural Sciences of Philadelphia in 1880-81 and 1886-89, and Curator of the American Entomological Society in 1888-89. From 1883 to 1886 he printed volumes XI-XIII of the Society's *Transactions*. It was during his custodianship that the writer of these lines, then a high school boy, first made acquaintance with the library and study collections of the Academy. I had gathered various insects, but was more particularly devoted to butterflies, of which, in 1886, I was making colored drawings. Mr. George Cresson found me delving into the entomological books and my diary for December 18, 1886, records: "Mr. Cresson of the Academy of Nat. Sci. first began to aid me, about this time." I recall distinctly that he told me that so many were interested in Lepidoptera and Coleoptera that I could do more and find more new things if I studied some other group of insects. I had a few dragonflies and the effect of his advice is to be seen from another note in my diary: "Jan. 28, 1887. About this time I commenced the study of the Neuroptera."

While he was interested in natural history in general, he was especially concerned with ants and formed a representative collection, secured through exchange with prominent Europeans, such as Professors Emery, Forel and others. He appears never to have published on entomology.

After leaving the entomological custodianship in 1889, he engaged in the insurance business and was for many years with the Franklin Fire Insurance Company of Phila-

delphia, of which his father was secretary, and later with the People's National Fire Insurance Company. He served on the School and Public Health Boards of Swarthmore. He was a member of the Academy of Natural Sciences and of the American Entomological Society from 1879 to 1883, when he resigned, but was subsequently reelected to both of them in 1887, retaining his membership until his death. He was librarian of the Society 1892-96.

PHILIP P. CALVERT.

HEREWARD CLUNE DOLLMAN, who was Entomologist to the Sleeping Sickness Survey of the British South Africa Company in 1913 and subsequently, died in London, January 3, 1919, from that disease whose ravages he had sought to combat. While in Africa he made excellent collections of Coleoptera, Lepidoptera and other insects which, with his drawings of larvae, notes on life histories, etc., have been presented by his father to the Natural History Museum at South Kensington. He was born March 10, 1888, and was educated at St. Paul's School and St. John's College, Cambridge. (*Ent. Mo. Mag.*, London, June, 1919.)


The same Museum has also received collections from New Zealand, Africa and Samoa, made by HAROLD SWALE, M.D., born at La Verie, near Dinant, Brittany, of English parents, died in England, May 3, 1919. He occupied various medical posts in the tropical regions named above. (*Ent. Mo. Mag.*, June, 1919.)

The death of FREDERIC HOVA WOLLEY DOD, of Midnapore, Alberta, Canada, on July 24, 1919, in a hospital at Chanak. [Macedonia?], is announced in *The Canadian Entomologist* for October last. His articles on the Noctuidae in that journal and in the NEWS are well-known and well appreciated. At the time of his death he was Second Lieutenant in the Yorkshire Light Infantry, attached Macedonian Labor Corps.

The NEWS for December, 1919, was mailed at the Philadelphia, Pa. Post Office on December 20, 1919.

EXCHANGES.

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

 These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted—Specimens of fleshy and woody fungi from which beetles have been collected, together with names of host trees, names of beetles, localities and dates. All specimens will be gratefully acknowledged and identified, and the information properly accredited. Harry B. Weiss, State Department of Agriculture, Trenton, N. J.

Wanted—Tipulidae from all parts of North America. Material from the far North especially desired. Will buy or exchange. Dr. W. G. Dietz, 21 North Vine Street, Hazelton, Pa.

For Exchange—Live pupae of *E. tityrus* and *H. tenuis*. What have you to offer? Joseph Syrový, Jr., 4119 W. 21st Place, Chicago, Illinois.

Coleoptera—Cotypes of *Chrybothris falli* Van Dyke for exchange for rare Buprestidae, domestic or foreign. Also other species for exchange. Richard T. Garnett, 3600 Broadway, Oakland, California.

Noctuidae—Will purchase, or exchange Lepidoptera from western states for, the rarer noctuid moths of N. Am. Desire Hampson's work on this family, also other literature. Chas. A. Hill, Hamilton Apts., No. 310, Omaha, Nebraska.

Wanted for Cash—Central and South American (especially Brazilian) Rhopalocera in papers. Good condition. Dr. G. Granville Buckley Rye Croft South, Manchester Road, Bury, Lancashire, England.

Complete Collection of Syrphid flies from this locality, all mounted with full data and correctly named, for exchange or sale. Desire Buprestidae and Cerambycidae, preferably from West. Alan S. Nicolay, 416a Grand Avenue, Brooklyn, New York.

Wanted—Perfect sp. of *Cat. marmorata*, *walshii*, *arizonae*, *babayaga*, *desdemona*, *herodias*, *consors*, *somnus*, *agrippina*, *sappho*, *phrynia*, I offer *A-1 flebilis*, *lacrymosa*, *evelina*, *paulina*, *obscura*, *angusti* *lucetta* *relecta*, *luctuosa*, *vidua*, *residua*, *epione*, *unijuga*, *partia*, *pura*, *purissima*, *aholibah*, *coloradensis*, *aspasia*, *faustina*, *luciana*, *zoe*, *innubens*, *hinda* *scintillans*, *nubilis*. Will give also exotics in exch.—Vl. G. Sasko, 2346 Walton St., Chicago, Ill.

For Exchange—Living pupae of Sphingidae, also bred specimens mounted; bred *Catocalas*; other material on pins and in paper. Wanted, N. A. and exotic Lepidoptera, N. A. *Catocalas* preferred.—Herman J. Erb 925 Hatch Ave., Woodhaven, Long Island, N. Y.

Wanted—Therevidae from all parts of North America. Monographing family. Will exchange Diptera or other orders.—R. W. Doane, Department of Entomology, Stanford University, Cal.

For Exchange—*Dicerca lepida* Lec. and other Coleoptera in exchange for Buprestidae. J. N. Knoll, Hummelstown, Pa.

Catocalae—For exchange—*gracilis*, *similis*, *crataegi*, *ultronia*, *unijuga* *cara*, *amatrix*, *concumbens*, *antinympa*, *annida*, *relecta*. E. Baylis, 5011 Saul St., Philadelphia, Pa.

Books Wanted—Volumes 11 and 14, Entom. News. Brooklyn Museum Library, Eastern Parkway and Washington Ave., Brooklyn, N. Y.

RECENT LITERATURE

FOR SALE BY

THE AMERICAN ENTOMOLOGICAL SOCIETY

1900 RACE ST., PHILADELPHIA, PA.

COLEOPTERA.

- 795.—**Blaisdell** (F. E.).—Studies in Alaudes (Tenebrionidae).
(Trans., **45**, 307-313, 1919)15
- 796.—**Blaisdell** (F. E.).—Synopsis and review of the species of
Coelus (Tenebrionidae). (Trans., **45**, 315-334, 1 pl.,
1919)40

DIPTERA.

- 2126.—**Van Duzee** (M. C.).—Two new Asyndetus with a table
of the North American species. (Ent. News, **30**, 248-
250, Ill., 1919)10

HEMIPTERA AND HOMOPTERA.

- 2129.—**Ferris** (G. F.).—A new species of Pseudodiaspis. (Ent.
News, **30**, 275-276, ill., 1919)10
- 2125.—**McAtee** (W. L.).—Notes on two Miridae, Campto-
brochis and Paracalocoris. (Ent. News, **30**, 246-247,
1919)10

HYMENOPTERA.

- 2131.—**Bradley** (J. C.).—A new Tachytes from Georgia. (Ent.
News, **30**, 298, 1919)10
- 2130.—**Cockerell** (T. D. A.).—Bees of the Rocky Mountain
National Park. (Ent. News, **30**, 286-291, 1919)15

LEPIDOPTERA.

- 2127.—**Weiss** (H. B.).—Tinea cloacella, bred from fungi. (Ent.
News, **30**, 251-252, 1919)10
- 2128.—**Braun** (A. F.).—Notes on Cosmopterygidae, with de-
scriptions of new genera and species. (Ent. News, **30**,
260-264, 1919)10.

ODONATA.

- 797.—**Calvert** (P. P.).—Gundlach's work on the Odonata of
Cuba: a critical study. (Trans., **45**, 335-396, 3 pls., 1919). 1.10

ORTHOPTERA.

- M-4.—**Hebard** (M.).—The Blattellidae of Panama. [A mono-
graphic study, describing 10 n. gen., 31 n. sps.] (Mem.,
4, 148 pp., 6 pls., 1919)2.50

ELCO

When we first used this word, it meant Elco Card Index Mounts only. The word Elco, as now used, applies to our entire line of Lepidoptera Specialties and Supplies, made and sold by us. It is our intention to increase this line as fast as it is practical to do so.

The items ready for business are listed below. A number of others will be ready during the winter.

THE ELCO LINE

Dept. 1—STOCK DEPARTMENT, LEPIDOPTERA—Papered or pinned; mounted in Elco Art Mounts, Riker Mounts, Elco Wing Mounts. Prices on application.

Dept. 2—ART DEPARTMENT, ELCO BUTTERFLY ART MOUNTS
5 x 6 inches, \$1.25; 8 x 12 inches, \$2.50; 12 x 16 inches, \$5.00

Dept. 3—SUPPLY DEPARTMENT, ELCO LABELS
Ruled, white, $\frac{3}{4}$ x $1\frac{1}{2}$, 65c. per 1000
Plain, white, gummed, $\frac{3}{4}$ x $1\frac{1}{4}$, 50c. per 1000
Plain, bristol board, 65c. per 1000

ELCO INDEX TABS—Eight colors gummed, $\frac{1}{4}$ x $\frac{7}{8}$, for color classification of records and specimens, 25c. per 1000 assorted.

ELCO CELLULOID SPREADING STRIPS—Transparent, assorted lengths, 10c. per 1000

ELCO CARD INDEX SPECIMEN MOUNTS
3 x 5, 10c. each; 4 x 6, 15c. each; 5 x 8, 20c. each.

ELCO CARD INDEX WING MOUNTS—Prices of sets on application.

Dept. 4—COLLECTOR'S SERVICE DEPARTMENT—Information in regard to this Department on request.

S. C. CARPENTER, Lepidoptera, 62 So. Whitney Street, Hartford, Conn.

FOR SALE BUTTERFLY COLLECTION
Containing over 700 Different
Species mounted on Cotton in 60 glass-covered drawers, in
oak cabinet, with large bottom drawer.

CARLO ZEIMET - - - PLANTSVILLE, CONN.

RECENT ARRIVALS: Papilio horishanus (n. sp.), Formosa.
Large. Perfect. Males only \$8.00.
Lot 50 Formosan Butterflies, includes many rarities, \$10.00. Cheap lots from
Africa, South America or India, 50 for \$5.00. 500 each Morpho amazonicus
and deidamia to be sold quick; first quality, 35c.; seconds, 25c. 15% discount
for 100 lots. Thousands of butterflies always in stock.

G. G. MACBEAN, Lepidopterist, Assiniboia, Sask., Canada

INSECT LIFE HISTORIES of all descriptions prepared for Colleges,
Schools, Departments of Health, etc.
Insects for Dissections. Pressed Cork. Send for Lists.

NEW JERSEY ENTOMOLOGICAL COMPANY

P. O. Box 432

Perth Amboy, New Jersey

NEW ARRIVALS

From Colombia, So. America: OVER 10,000 BUTTERFLIES, INCLUDING

Morpho cypris
" sulkowskyi

Morpho amathonte
Caligo spp.

From Cuba:

1500 BUTTERFLIES AND MOTHS, INCLUDING

Papilio columbus
" andraemon
" celadon
" devilliersi

Urania boisduvali
Erinyis guttalaris
Protoparce brontes, etc.

From Venezuela:

Over 5000 Lepidoptera
200 Dynastes hercules

From New Guinea:

2000 Coleoptera
200 Orthoptera



From Assam, India:

1200 BUTTERFLIES AND MOTHS, INCLUDING

Papilio arcturus
" philoxenus

Kallima inachis
Brahmaea wallachi

And Many Other Showy Species

From Tibet (Bhutan)

Armandia lidderdalii

Parnassius hardwicki

CATALOGUES OF ENTOMOLOGICAL SUPPLIES AND SPECIMENS ON APPLICATION

If interested kindly send your list of desiderata for further information to

THE KNY-SCHEERER CORPORATION

Department of Natural Science
G. Lagai, Ph.D.

New York
404-410 W. 27th Street

